

Serial No. 09/672,512
Page 2 of 13

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LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please reconsider the claims as follows:

CLAIMS

1 1. (previously presented) A method for generating a composite EM field to carry a signal to at least two terminals, the method comprising the step of directing energy in a plurality of directions, the amount of energy directed in the direction of each of the terminals being a function of the locations and acceptable receive strengths of at least two of the terminals, wherein the direction is an azimuth direction.

1 2. (original) The method of claim 1, wherein the function is such that a strength of the EM field at the location of any of the at least two terminals is at least as large as, but not significantly larger than, needed for that terminal to receive the signal carried by the EM field with an acceptable level of signal quality.

1 3. (original) The method of claim 1, wherein the directing step comprises the steps of:
2 determining for each one of the terminals an EM field that would have to be
3 generated for the one terminal in order to provide an acceptable receive strength thereat, the
4 determining taking into account the strength, at the location of the one terminal, of EM fields
5 previously determined for others of the terminals;

6 repeating the first determining step until the EM fields determined for the at least two
7 of the terminals provide an EM field strength for each of the at least two of the terminals that
8 is substantially equal to its adequate receive strength; and

9 determining the amount of energy to be directed in the direction of each of the
10 terminals based on the EM fields thus determined.

1 4. (original) The method of claim 3, wherein:
2 each EM field being represented by one of a plurality of beam-patterns;

Serial No. 09/672,512

Page 3 of 13

3 the first determining step comprises determining for each one of the terminals a beam
4 pattern that would have to be generated for the one terminal in order to provide an acceptable
5 receive strength thereat, the determining taking into account the EM field strength, at the
6 location of the one terminal, of beam-patterns previously determined for others of the
7 terminals; and

8 the repeating step comprises repeating the first determining step until the beam-
9 patterns determined for the at least two of the terminals provide an EM field strength for each
10 of the at least two of the terminals that is substantially equal to its adequate receive strength.

1 5. (original) The method of claim 4, wherein:

2 the beam-patterns being voltage beam patterns;

3 the acceptable receive strength being an acceptable receive voltage; and

4 the adequate receive strength being an adequate receive voltage.

1 6. (original) The method of claim 4, wherein one of a plurality of weight vectors
2 corresponds to each of the beam-patterns, and the second determining step comprises the
3 steps of:

4 determining a composite weight vector using the plurality of weight vectors, and a
5 null-filling factor;

6 determining a composite beam-pattern using the composite weight vector, the
7 composite beam-pattern representing the composite EM field; and

8 determining the amount of energy to be directed in the direction of each of the
9 terminals based on the composite EM field.

1 7. (original) The method of claim 1, wherein the directing step comprises the steps of:
2 determining for each one of the terminals an EM field that would have to be
3 generated for the one terminal in order to provide an acceptable receive strength thereat if
4 that one terminal was the only terminal that needed to receive the signal;

5 determining a scaling factor for each EM field such that each EM field, associated
6 with the at least two terminals, scaled by its scaling factor provides an EM field strength at
7 the location of each of these at least two terminals that is substantially equal to its adequate
8 receive strength;

Serial No. 09/672,512

Page 4 of 13

9 scaling each EM field, associated with the at least two terminals, by its scaling factor;
10 and
11 determining the amount of energy to be directed in the direction of each of the
12 terminals based on the EM fields thus determined.

8. (canceled)

1 9. (original) The method of claim 1, further comprising the step of transmitting the
2 energy.

1 10. (previously presented) A transmitter operable to generate a composite EM field to
2 carry a signal to at least two terminals by directing energy in a plurality of directions, the
3 amount of energy directed in the direction of each of the terminals being a function of the
4 locations and acceptable receive strengths of at least two of the terminals, wherein the
5 direction is an azimuth direction.

1 11. (original) The transmitter of claim 10, wherein the function is such that a strength of
2 the EM field at the location of any of the at least two terminals is at least as large as, but not
3 significantly larger than, needed for that terminal to receive the signal carried by the EM field
4 with an acceptable level of signal quality.

1 12. (original) The transmitter of claim 10, further comprising a processor operable to:
2 determine for each one of the terminals an EM field that would have to be generated
3 for the one terminal in order to provide an acceptable receive strength thereat, the
4 determining taking into account the strength, at the location of the one terminal, of EM fields
5 previously determined for others of the terminals;
6 repeat the first determining until the EM fields determined for the at least two of the
7 terminals provide an EM field strength for each of the at least two of the terminals that is
8 substantially equal to its adequate receive strength; and
9 determine the amount of energy to be directed in the direction of each of the terminals
10 based on the EM fields thus determined.

Serial No. 09/672,512

Page 5 of 13

- 1 13. (original) The transmitter of claim 12, wherein:
 - 2 each EM field being represented by one of a plurality of beam-patterns;
 - 3 the first determining comprises determining for each one of the terminals a beam
 - 4 pattern that would have to be generated for the one terminal in order to provide an acceptable
 - 5 receive strength thereat, the determining taking into account the EM field strength, at the
 - 6 location of the one terminal, of beam-patterns previously determined for others of the
 - 7 terminals; and
 - 8 the repeating comprises repeating the first determining until the beam-patterns
 - 9 determined for the at least two of the terminals provide an EM field strength for each of the
 - 10 at least two of the terminals that is substantially equal to its adequate receive strength.
- 1 14. (original) The transmitter of claim 13, wherein:
 - 2 the beam-patterns being voltage beam patterns;
 - 3 the acceptable receive strength being an acceptable receive voltage; and
 - 4 the adequate receive strength being an adequate receive voltage.
- 1 15. (original) The transmitter of claim 13, wherein one of a plurality of weight vectors
- 2 corresponds to each of the beam-patterns, and the second determining comprises:
 - 3 determining a composite weight vector using the plurality of weight vectors, and a
 - 4 null-filling factor;
 - 5 determining a composite beam-pattern using the composite weight vector, the
 - 6 composite beam-pattern representing the composite EM field; and
 - 7 determining the amount of energy to be directed in the direction of each of the
 - 8 terminals based on the composite EM field.
- 1 16. (original) The transmitter of claim 10, further comprising a processor operable to:
 - 2 determine for each one of the terminals an EM field that would have to be generated
 - 3 for the one terminal in order to provide an acceptable receive strength thereat if that one
 - 4 terminal was the only terminal that needed to receive the signal;
 - 5 determine a scaling factor for each EM field such that each EM field, associated with
 - 6 the at least two terminals, scaled by its scaling factor provides an EM field strength at the

Serial No. 09/672,512

Page 6 of 13

- 7 location of each of these at least two terminals that is substantially equal to its adequate
- 8 receive strength;
- 9 scale each EM field, associated with the at least two terminals, by its scaling factor;
- 10 and
- 11 determine the amount of energy to be directed in the direction of each of the terminals
- 12 based on the EM fields thus determined.

17. (canceled)

- 1 18. (previously presented) An system comprising a transmitter operable to generate a
- 2 composite EM field to carry a signal to at least two terminals by directing energy in a
- 3 plurality of directions, the amount of energy directed in the direction of each of the terminals
- 4 being a function of the locations and acceptable receive strengths of at least two of the
- 5 terminals, wherein the direction is an azimuth direction.

- 1 19. (original) The system of claim 18, wherein the function is such that a strength of the
- 2 EM field at the location of any of the at least two terminals is at least as large as, but not
- 3 significantly larger than, needed for that terminal to receive the signal carried by the EM field
- 4 with an acceptable level of signal quality.

- 1 20. (original) The system of claim 18, further comprising a processor coupled to the
- 2 transmitter, the processor operable to:

- 3 determine for each one of the terminals an EM field that would have to be generated
- 4 for the one terminal in order to provide an acceptable receive strength thereat, the
- 5 determining taking into account the strength, at the location of the one terminal, of EM fields
- 6 previously determined for others of the terminals;

- 7 repeat the first determining until the EM fields determined for the at least two of the
- 8 terminals provide an EM field strength for each of the at least two of the terminals that is
- 9 substantially equal to its adequate receive strength; and

- 10 determine the amount of energy to be directed in the direction of each of the terminals
- 11 based on the EM fields thus determined.

Serial No. 09/672,512

Page 7 of 13

1 21. (original) The system of claim 20, wherein the processor being located in the
2 transmitter.

1 22. (original) The system of claim 20, wherein the system is a wireless communication
2 system having at least one MSC, and the processor being located in the MSC.

1 23. (original) The system of claim 20, wherein:
2 each EM field being represented by one of a plurality of beam-patterns;
3 the first determining comprises determining for each one of the terminals a beam
4 pattern that would have to be generated for the one terminal in order to provide an acceptable
5 receive strength thereat, the determining taking into account the EM field strength, at the
6 location of the one terminal, of beam-patterns previously determined for others of the
7 terminals; and
8 the repeating comprises repeating the first determining until the beam-patterns
9 determined for the at least two of the terminals provide an EM field strength for each of the
10 at least two of the terminals that is substantially equal to its adequate receive strength.

1 24. (original) The system of claim 23, wherein:
2 the beam-patterns being voltage beam patterns;
3 the acceptable receive strength being an acceptable receive voltage; and
4 the adequate receive strength being an adequate receive voltage.

1 25. (original) The system of claim 23, wherein one of a plurality of weight vectors
2 corresponds to each of the beam-patterns, and the second determining comprises:
3 determining a composite weight vector using the plurality of weight vectors, and a
4 null-filling factor;
5 determining a composite beam-pattern using the composite weight vector, the
6 composite beam-pattern representing the composite EM field; and
7 determining the amount of energy to be directed in the direction of each of the
8 terminals based on the composite EM field.

Serial No. 09/672,512

Page 8 of 13

1 26. (original) The system of claim 18, further comprising a processor coupled to the
2 transmitter, the processor operable to:

3 determine for each one of the terminals an EM field that would have to be generated
4 for the one terminal in order to provide an acceptable receive strength thereat if that one
5 terminal was the only terminal that needed to receive the signal;

6 determine a scaling factor for each EM field such that each EM field, associated with
7 the at least two terminals, scaled by its scaling factor provides an EM field strength at the
8 location of each of these at least two terminals that is substantially equal to its adequate
9 receive strength;

10 scale each EM field, associated with the at least two terminals, by its scaling factor;
11 and

12 determine the amount of energy to be directed in the direction of each of the terminals
13 based on the EM fields thus determined.

1 27. (original) The system of claim 18, further comprising an antenna operable to transmit
2 the energy.

1 28. (original) The system of claim 27, wherein the antenna is a phased-array antenna.

1 29. (original) The system of claim 18, the system being a base station and the terminals
2 being mobile terminals.

1 30. (original) The system of claim 18, the system being a wireless communication system
2 and the terminals being mobile terminals.

31. (canceled)